CHAPTER 5
CALL FOR FIRE

A call for fire is a concise message prepared by the observer. It contains all information the FDC needs to determine the method of target attack.

5-1. INTRODUCTION

The call for fire is a *request* for fire. It must be sent quickly and be clear enough to be understood, recorded, and read back without error by the FDC. The observer should tell the RATELO that he has seen a target. This enables the RATELO to start the call for fire while the target location is determined. The RATELO sends the information, as it is determined, instead of waiting until a complete call for fire has been prepared.

a. Regardless of the target location method used, the normal call for fire is transmitted in a maximum of three parts, consisting of six elements, with a break and a read back after each part. The three parts are as follows:

- Observer identification and warning order.
- Target location.
- Description of target, method of engagement, and method of fire and control.

b. The six elements of the call for fire are listed below in the sequence in which they are transmitted.

- Observer identification.
- Warning order.
- Target location.
- Target description.
- Method of engagement.
- Method of fire and control.

5-2. OBSERVER IDENTIFICATION

Observer identification tells the FDC who is calling for fire, and it clears the net for the fire mission. It consists of appropriate call signs or codes needed to establish contact between the observer and the unit FDC to which he is calling for fire.

5-3. WARNING ORDER

The warning order consists of the type of mission and the method of target location. It is a request for fire unless authority has been given to order fire.

a. **Type of Mission**. The following describes the four types of missions for a warning order.

(1) *Adjust fire (A/F).* When the observer decides that an adjustment is needed because of questionable target location or lack of registration corrections, he announces, "Adjust fire."

(2) *Fire for effect (FFE).* The observer should always strive for first-round fire for effect. The accuracy required to FFE depends on the target and the ammunition being used. When the observer is certain that the target location is accurate and that the first volley will have the desired effect on the target with little or no adjustment, he announces, "Fire for effect." Accurate, immediate FFE has appreciable surprise value and is preferred. FFE

without adjustment is warranted when the target has been fired upon previously or when it is within transfer limits of a registration point (+/- 1,500 meters; right or left 400 mils) and its location is either surveyed or accurately specified by the observer.

(3) *Immediate suppression or immediate smoke (IS).* When engaging a planned target or target of opportunity that has taken friendly maneuver or aerial elements under fire, the observer announces, "Immediate suppression (target location)." If a hasty screen for obscuration is the desired effect, then the FO announces, "Immediate smoke."

b. **Target Locations**. This element enables the FDC to plot (M16/M19) or enter (MBC) the location of the target to determine firing data.

(1) *Grid*. If the target is located by the grid method, the FO announces, "Grid." In a grid mission, six-digit grids are normally sent. Eight-digit grids should be sent for registration points or other points for which greater accuracy is required. Since the FDC does not need the OT direction to locate the target, the direction is sent at the end of the call for fire or just before the initial correction. Direction is expressed to the nearest 10 mils.

(2) *Shift from a known point.* If the target is located by this method, the FO announces, "Shift (known point)." In a shift from a known point mission, the point from which the shift will be made is sent in the warning order. The point must be known to both the observer and FDC. The observer then sends the OT direction. Normally, direction to the target will be sent to the nearest 10 mils; however, the FDC can use mils, degrees, or cardinal directions, whichever is specified by the observer. The lateral shift (how far left or right the target is from the known point, expressed to the nearest 10 meters), the range shift (how much farther [add] or closer [drop] the target is in relation to the known point, to the nearest 100 meters), and the vertical shift (how much the target is above [up] or below [down] the altitude of the known point, to the nearest 5 meters) are sent next. The vertical shift is ignored unless it exceeds 30 meters.

(3) *Polar plot*. If the target is located by use of the polar plot method, the observer announces, "Polar." In a polar plot mission, the word *polar* in the warning order alerts the FDC that the target will be located with respect to the observer's position. The observer's location must be known to the FDC. The observer sends the direction (to the nearest 10 mils) and distance (to the nearest 100 meters). A vertical shift (to the nearest 5 meters) tells the FDC how far the target is located above (up) or below (down) the observer's location. Vertical shift may also be described by a vertical angle (VA) in mils relative to the observer's location. (This method is used when the FO is conducting a laser polar.)

5-4. TARGET DESCRIPTION

The observer must describe the target in enough detail to allow the section sergeant to determine the amount and type of ammunition to use. The section sergeant selects *different* ammunition for *different* types of targets. The observer's description should be brief but accurate and contain the following:

a. What the target is (troops, equipment, supply dump, trucks, and so forth).

b. What the target is doing (digging in, establishing an assembly area, and so forth).

c. The number of elements in the target (squad, platoon, three trucks, six tanks, and so forth).

d. The degree of protection (in the open, in fighting positions, in bunkers with overhead cover, and so forth).

e. The target size and shape if significant. When the target is rectangular, the length and width (in meters), and the attitude (azimuth of the long axis) to the nearest 50 mils should be given—for example, 400 meters by 100 meters; attitude 2,650. When the target is circular, the radius should be given. Linear targets may be described by length, width, and attitude.

5-5. METHOD OF ENGAGEMENT

The observer must indicate how he wants to attack the target. This element consists of the type of adjustment, type of ammunition, and distribution of fire.

a. **Type of Adjustment**. In an adjustment, two types of fire may be used—area or precision.

(1) If no specific type of adjustment is designated, area fire will be used. (Split a 100-meter bracket.)

(2) When precision fire is desired, the observer announces, "Registration" or "Destruction," depending on the reason for firing. (Split a 50-meter bracket.)

(3) The term *danger close* will be included in the method of engagement when the target is within 600 meters of friendly troops.

b. **Type of Ammunition**. If the observer does not request a specific projectile or fuze, he is given shell HE, fuze IMP (impact).

(1) The observer may initially request one type of projectile or fuze and subsequently request another to complete the fire mission.

(2) When the observer requests smoke, the chief computer normally directs the use of HE initially in the adjustment and WP for the completion of the adjustment and FFE.

(3) When the observer wants a combination of projectiles or fuzes in effect, he must state so in this element of the call for fire—for example, "HE and WP in effect" or "IMP and PROX in effect."

(4) The observer may also request the volume of the fire he needs for FFE—for example, "Three rounds." If the observer does not specify the number of rounds to be fired in effect, the FDC should notify the observer of the number of rounds that will be fired in effect.

c. **Distribution of Fire**. A standard sheaf is fired on an area target in FFE. When another type of sheaf is desired, the observer must announce the type of sheaf desired; for example, "Converge" or "Open sheaf."

5-6. METHODS OF FIRE AND CONTROL

The methods of fire and control indicate the desired manner of attacking the target, whether the observer wants to control the time of delivery of fire or if he can observe the target. The observer announces the methods of fire and control using the terms discussed below:

a. **Method of Fire**. Adjustment normally is conducted with the number 2 mortar. The observer may request any weapon or combination of weapons to adjust. For example, if the observer wants to see where each of the mortars in the section hits, he may request, "Section right (left)." The normal interval of time between rounds fired by a section right or left is 10 seconds. If the observer wants another interval, he may so specify.

b. **Method of Control**. The control element indicates the control, which the observer exercises over the time of fire delivery and if an adjustment is to be made or fire is to be

delivered without adjustment. In the absence of observer methods of control, the firing section fires when ready (W/R) or under the FDC control when controlling the fire. The observer announces the method of control by use of the terms below:

(1) *At my command* (AMC). This announcement indicates that the observer desires to control the time of delivery of fire. The observer announces, "At my command," immediately preceding "Adjust fire or fire for effect." When the weapons are ready to fire, the FDC personnel announces, "Section is ready," to the observer. The observer then announces, "Fire," when he wants the mortar section to fire. At my command remains in effect until the observer announces, "Cancel at my command" or "End of mission."

(2) *Cannot observe*. This announcement indicates that the observer cannot adjust fire. However, the observer believes that a target exists at the given location, and the target is important enough to justify firing on it without adjustment.

(3) *Time on target* (TOT). The observer may tell the FDC when he wants the rounds to impact by requesting, "Time on target (amount of minutes desired) minutes from now," or "Time on target zero six four five (0645) hours." The observer must conduct a time check to ensure that his timepiece is synchronized with the FDC's.

(4) *Continuous illumination*. If no interval is given by the observer, the section sergeant determines the interval by the burn time of the illuminating ammunition in use. If another interval is required, it is indicated in seconds.

(5) *Coordinated illumination*. The observer may order the interval between illuminating and HE rounds in seconds. This order achieves a time of impact of the HE round that coincides with optimum illumination, or he may use normal at-my-command procedures. The preferred method is to have the FDC compute the intervals between the HE and illuminating rounds.

(6) *Cease fire.* This command is used during firing of two or more rounds to stop the loading of rounds into the mortars. The gun sections may fire any rounds that have already been loaded (hung).

(7) *Check fire*. This command is used to cause an immediate halt in firing.

(8) *Continuous fire*. In mortars, this command means loading and firing as rapidly as possible, consistent with accuracy, within the prescribed rate of fire for the mortar being used. Firing continues until suspended by the commands CEASE LOADING or CHECK FIRE.

(9) *Repeat*. This command can mean one of two things.

(a) During adjustment, REPEAT means to fire another round(s) at the last data and adjust for any change in ammunition.

(b) During FFE, REPEAT means to fire the same number of rounds using the same method of FFE. Changes to the number of guns, gun data, interval, or ammunition may be requested.

(10) *Followed by*. This is part of a term used to indicate a change in the rate of fire, the type of ammunition, or another order for FFE.

5-7. MESSAGE TO OBSERVER

After receiving the call for fire, the FDC determines how the target will be attacked. That decision may be announced to the observer in the form of a message to observer (MTO).

a. The MTO consists of the following four items:

(1) *Unit(s) to fire*—the number of mortars available that will fire the mission.

EXAMPLE

In a six-gun 120-mm mortar platoon, two guns are already involved in a fire mission. The other four are available, but the FDC only wants to use three mortars on the new target. The FDC would announce to the observer, "Three guns."

(2) *Changes to the call for fire*—any change to the observer's request in the call for fire.

EXAMPLE

The observer requested IMP in effect, and the FDC decides to fire PROX in effect.

(3) *Number of rounds*—the number of rounds for each tube in FFE.

(4) *Target number*—assigned to each mission to help the processing of subsequent corrections.

b. The information below can also be transmitted in the MTO.

(1) *Angle T*—sent to the observer when it is equal to or greater than 500 mils or when requested (see Chapter 4, paragraph 4-4a).

(2) *Time of flight*—sent to an observer during a moving target mission, during an aerial observer mission, or when requested.

NOTE: See FM 6-30 and TC 6-40 for more information on MTOs.

5-8. CALL-FOR-FIRE FORMAT

The following is the format for a call for fire.

a. **Observer Identification**.

b. **Warning Order**.
   (1) Adjust fire.
   (2) Fire for effect.
   (3) Suppression.
   (4) Immediate suppression/smoke.

c. **Location of Target**.
   (1) Grid coordinates—direction.
   (2) Shift from a known point—direction, lateral shift, range shift, vertical shift.
   (3) Polar coordinates—direction, distance, vertical shift from the OP.

d. **Description of Target**.

e. **Method of Engagement**.
   (1) Type of adjustment—area, precision (registration, destruction), danger close.
   (2) Ammunition and fuze.
   (3) Distribution.
   - Standard sheaf.
   - Parallel sheaf.
   - Open sheaf.
   - Converged sheaf.

- Special sheaf.
- Traversing fire.
- Range spread, lateral spread, or range lateral spread (illumination only).

f. **Method of Fire and Control**.

(1) Method of fire.

(2) Method of control.

- At my command.
- Time on target.
- Continuous illumination.
- Coordinated illumination.
- When ready.

5-9. AUTHENTICATION

Authentication is considered a normal element of the initial requests for indirect fire.

a. The FDC inserts the challenge in the last read back of the call for fire. The FO transmits the correct authentication reply to the FDC immediately following the challenge. Authentication replies exceeding 20 seconds are automatically suspect and a basis for rechallenge. Subsequent adjustments of fire or immediate engagement of additional targets by the observer who originated the fire request normally would not require continued challenge by the FDC.

b. The two methods of authentication authorized for use are as follows:

- Challenge and reply.
- Transmission.

The operational distinction between the two is that challenge and reply require two-way communications, whereas transmission authentication does not. Challenge and reply authentication is used when possible. Transmission authentication is used only if authentication is required and it is not possible or desirable for the receiving station to reply—for example, message instruction, imposed radio silence, final protective fire, and immediate suppression.

c. The observer is given a transmission authentication table IAW unit SOP. The table consists of 40 columns with authenticators in each column. After each authenticator is used, a line may be drawn through it to avoid using the same one.